



MORBIDITY AND MORTALITY WEEKLY REPORT

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Epidemiologic Notes and Reports**Clinical Spectrum of Eosinophilia-Myalgia Syndrome — California**

As of January 12, 1990, 210 eosinophilia-myalgia syndrome (EMS) cases (1,2) had been reported to the California Department of Health Services (CDHS)*; three patients have died. This report summarizes clinical features and laboratory findings in 118 EMS patients for whom completed case-report forms are available.

One hundred five (89%) of the 118 patients were female; 94% were non-Hispanic white, 2% were Hispanic, <1% were black, and <1% were Asian (for 3%, race was unknown). Patients ranged in age from 29 to 73 years (median: 48 years). One hundred three (87%) patients became ill during or after July 1989. All patients reported use of L-tryptophan (LT) supplements before onset of illness; the time from onset of LT use to onset of symptoms varied from <2 weeks to >15 years (median: 152 days). Hospitalization was reported for 34 (29%) patients.

The most commonly reported symptoms were myalgia (100%) and arthralgia (69%), followed by dyspnea or cough (64%) and rash (64%) (Table 1). Edema occurred in 51% of patients, and fever was reported by 47%. Scleroderma-like skin changes (e.g., skin thickening) and increased hair loss were each reported in 18% of patients.

Neuropathy was diagnosed by physical examination or electrophysiologic testing in 16 (14%) cases. At least three patients have developed a progressive polyneuropathy; electromyographic testing detected axonal loss in all these patients.

Of the 88 patients who received chest radiographs, 14 (16%) had pulmonary infiltrates, and 13 (15%) had pleural effusions (Table 1). Hypoxia (arterial PO₂ <60/mm Hg) occurred in four persons; in two of these patients, lung biopsies revealed interstitial inflammation. Cardiac manifestations, reported in six patients, included acute congestive heart failure (two patients—one with biopsy-proven myocarditis), pulmonary artery hypertension (two patients), and pericardial effusion and atrial fibrillation (one patient each). Embolic complications were reported in one patient.

Eosinophilia occurred in all patients; counts ranged from 1070 to 32,190 cells/mm³ (median: 5635 cells/mm³). Leukocytosis was reported in 83% of patients (Table 1). The erythrocyte sedimentation rate (ESR) and serum IgE were elevated in 33% and

*CDHS used the CDC surveillance case definition for EMS (2).

Eosinophilia-Myalgia Syndrome – Continued

11% of those tested, respectively. Of 12 patients tested, antinuclear antibody was detected in nine and exhibited a range of immunofluorescence patterns. Rheumatoid factor titers were within normal limits for all of five patients tested. Aldolase was elevated in 58% of patients tested; creatine phosphokinase was elevated in only 8%. Of the 15 patients for whom the results of muscle biopsies were known, eosinophilic infiltration of the muscle and/or fascia was detected in six, unspecified inflammation and/or vasculitis in four, and atrophy only in two; three were normal. Elevated liver function tests (primarily lactate dehydrogenase) occurred in 51% of patients tested, although hepatomegaly (3%) and splenomegaly (1%) were rare.

Of the three deaths, one was attributed to aspiration pneumonia due to severe bulbar motor weakness. Although the cause of death has not yet been determined for the other two patients, one had become obtunded; findings on magnetic resonance imaging for that patient were consistent with cerebral vasculitis. The other patient died suddenly at home. All deaths occurred 2–3 months after onset of illness.

In addition to the cases described above, CDHS has received reports of five persons who used LT and had eosinophilia and dyspnea but no myalgia. In addition, an infant with unexplained eosinophilia, fever, rash, and vomiting was born to a woman who took LT daily during the last 4 months of pregnancy; the mother is asymptomatic. CDHS is investigating an additional death associated with EMS reported after January 12.

Although CDHS did not systematically collect information on treatment modalities, some physicians reported to CDHS that corticosteroids often decreased the eosinophilia but had less effect on the myalgia. Subcutaneous heparin reportedly relieved muscle pain in some patients. Plasmapheresis was attempted in one California EMS patient with progressive polyneuropathy; some improvement of motor symptoms occurred initially, but symptoms relapsed when plasmapheresis was discontinued, and a second course was ineffective. Because the information reported to CDHS is anecdotal only, CDHS has not recommended any specific medical therapy other than general supportive care and discontinuation of LT use.

TABLE 1. Prevalences of selected symptoms and signs and of selected laboratory and radiographic findings among 118 persons with eosinophilia-myalgia syndrome – California, November 13, 1989–January 12, 1990

Clinical			Laboratory			
Symptom/Sign	No.	(%)	Finding	Total tested	No.	(%)
Myalgia	118	(100)	Leukocytosis	111	92	(83)
Arthralgia	82	(69)	Elevated aldolase	43	25	(58)
Dyspnea or cough	76	(64)	Elevated liver function tests	102	52	(51)
Rash	76	(64)	Elevated erythrocyte sedimentation rate	82	27	(33)
Edema	60	(51)	Pulmonary infiltrates	88	14	(16)
Fever	55	(47)	Pleural effusion	86	13	(15)
Sclerodermiform skin changes	21	(18)	Elevated IgE	27	3	(11)
Hair loss	21	(18)	Elevated creatine phosphokinase	80	6	(8)
Neuropathy	16	(14)				
Hepatomegaly	3	(3)				
Splenomegaly	1	(1)				

Eosinophilia-Myalgia Syndrome – Continued

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Editorial Note: As of February 9, state health departments had reported 1269 EMS cases, including 13 deaths, to CDC. Cases reported from California represent 19% of the U.S. total. Other than the higher proportion of California patients with elevated aldolase and abnormal liver function tests, the characteristics of patients in California are similar to those reported from patients elsewhere in the United States (CDC, unpublished data).

The clinical manifestations of some EMS patients in California also parallel those in victims of toxic-oil syndrome (TOS) (3,4). Particularly severe features of TOS, also seen in some California EMS patients, include progressive polyneuropathy leading to pulmonary hypertension, vasculitis, embolic phenomena, and death. Clinicians should be aware of the multisystemic nature of EMS and the potential for severe, long-term sequelae in some EMS patients.

References

1. CDC. Eosinophilia-myalgia syndrome—New Mexico. MMWR 1989;38:765–7.
2. CDC. Eosinophilia-myalgia syndrome and L-tryptophan-containing products—New Mexico, Minnesota, Oregon, and New York, 1989. MMWR 1989;38:785–8.
3. Kilbourne EM, Rigau-Perez JG, Heath CW Jr, et al. Clinical epidemiology of toxic-oil syndrome: manifestations of a new illness. N Engl J Med 1983;309:1408–14.
4. Toxic Epidemic Syndrome Study Group. Toxic epidemic syndrome, Spain, 1981. Lancet 1982;2:697–702.

Transmission of *Plasmodium vivax* Malaria – San Diego County, California, 1988 and 1989

Malaria transmission in the United States occurs infrequently; since 1950, 21 outbreaks of introduced malaria, all caused by *Plasmodium vivax*, have been identified. However, 14 of these occurred in California (seven during 1986 [1], 1988, and 1989). Four outbreaks—one each in 1986 (1) and 1988 and two in 1989—occurred in San Diego County. This report describes the outbreaks in San Diego County in 1988 and 1989.

August 1988

On August 2, 1988, a migrant worker who lived in a canyon near the Lake Hodges reservoir (25 miles north of San Diego) (Figure 1) was diagnosed with *P. vivax* infection. Twelve other workers who lived in the same area and had symptoms suggestive of malaria were referred by a public health nurse for diagnosis; on August 3, *P. vivax* parasitemia was confirmed in all 12 workers.

An epidemiologic investigation identified a total of 30 persons who had symptomatic *P. vivax* infections with onset between July 24 and September 18. Two cases were in local permanent residents who had no apparent risk factors for malaria, and 28 were in migrant workers employed primarily in agricultural businesses near the Lake Hodges reservoir. All patients denied previous malaria infection, intravenous (IV)-drug use, and blood transfusions in the previous 3 years.

Malaria — Continued

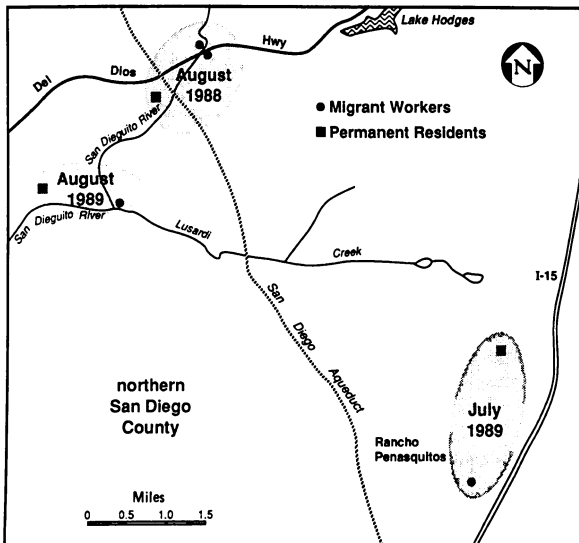
Nineteen of the migrant workers lived in the canyon area; seven lived on a farm directly south of the canyon; one pregnant woman worked at a tree nursery adjacent to the farm and was required to be outside at dawn and dusk; and one migrant worker had onset of symptoms after moving from the canyon. The two cases in local permanent residents occurred in a couple who lived in a development adjacent to the farm.

The migrant workers in the canyon had diverted water flow from a small channel to their camp; some of their shelters (consisting primarily of plastic tarpaulins and cardboard materials) were located within 5 feet of the water. Of the 39 migrant workers (20 of whom had malaria) in this canyon, questionnaires were administered to 31 (79%); the remaining workers could not be located. Cases and noncases were similar in terms of type of shelter used for sleeping (open vs. enclosed), average number of daily hours spent by open water (lagoon, river, or canal), bathing site, and time of day returning to the camp.

A possible index case for the outbreak was a migrant worker with documented *P. vivax* malaria who had spent several nights in the canyon at the end of June. Light traps placed near the canyon at that time caught 79 adult female *Anopheles hermsi* mosquitoes, a competent malaria vector.

On August 3, the San Diego County Department of Health Services began identification and treatment of persons with malaria. Chloroquine prophylaxis was administered to migrant workers in the canyon and on the farm directly south of the canyon. On August 4, traps placed in the canyon camp area caught from one to 11 adult female *An. hermsi* per trap; two traps placed next to an irrigation pond on the farm south of the canyon caught 194 *An. hermsi* mosquitoes. Vector-control efforts included the application of larvicides and insecticides. These efforts resulted in substantial reductions in mosquito populations.

FIGURE 1. Locations of three malaria outbreaks — northern San Diego County, California, August 1988 and July and August 1989



*Malaria — Continued***July 1989**

On July 7, a migrant worker who lived in an open field in Rancho Penasquitos (20 miles northeast of San Diego) (Figure 1) had onset of chills and fever; *P. vivax* infection was diagnosed. A second migrant worker from this area became ill on July 30; *P. vivax* parasites were detected in a blood smear. On August 22, a permanent resident of this area became ill; *P. vivax* parasites were identified. This resident had no history of foreign travel, IV-drug use, or blood transfusions. Twelve light traps placed in the open field in Rancho Penasquitos on July 26 caught six *An. hermsi* mosquitoes. On August 31, 36 *An. hermsi* mosquitoes were caught in eight light traps placed near the resident's house. Control measures included treating infected persons and applying larvicides and adulticides. No further cases were reported from this area.

August 1989

On August 6, a San Diego resident who lived north of the San Dieguito River (Figure 1) became ill with confirmed *P. vivax* infection. He had no history of foreign travel, IV-drug use, or blood transfusions. On August 10, a migrant worker who resided in a camp at the San Dieguito River (1 mile from the resident's house) became ill, and *P. vivax* infection was diagnosed. On August 11, *P. vivax* infections were diagnosed in three of 40 migrant workers living in the area around the camp. On August 10, 27 *An. hermsi* mosquitoes were caught in five light traps in the area. Control measures included the application of larvicides and adulticides and the administration of chloroquine chemoprophylaxis to migrant workers in the area. No further cases were reported from this area.

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Editorial Note: The outbreak of malaria in 30 persons in San Diego County in 1988 was the largest outbreak of introduced malaria in the United States since 1952, when 35 *P. vivax* infections were reported in members of a girls' club in California (2). A second large outbreak in 1986 involved 27 migrant workers and one local resident in Carlsbad, 35 miles north of San Diego (1).

Common features of the 1986 outbreak and later instances of malaria transmission in San Diego County were 1) the limited access to medical care for migrant workers with malaria, resulting in delays in identification and treatment of parasitemic persons and in institution of control measures; 2) the lack of sanitary water and waste water disposal facilities and adequate shelter for the workers; and 3) the presence of an effective *Anopheles* mosquito vector and a susceptible population. Specific sources of infection for the mosquitoes could not be identified. However, in all of these outbreaks, agricultural workers from countries with endemic malaria had been present in the affected areas.

Other clusters of introduced malaria in the San Diego area may have gone undetected because a diagnosis of malaria might not have been considered in symptomatic patients with no history of travel abroad and because malaria may be undetected in migrant workers and other populations who have limited access to medical care. Anopheline malaria vectors are found in many parts of California; therefore, locations that facilitate introduction and transmission of malaria cannot be readily predicted.

Malaria — Continued

Reduction of the risk for malaria in migrant workers requires improved access to medical care and early detection of malaria cases. For workers living in remote areas, disease surveillance, health education, and early recognition and medical evaluation of illness are needed to reduce the risk for malaria transmission.

References

1. Maldonado YA, Nahlen BL, Roberto RR, et al. Transmission of *Plasmodium vivax* malaria in San Diego County, California, 1986. Am J Trop Med Hyg 1990 (in press).
2. Brunetti R, Fritz RF, Hollister HC. An outbreak of malaria in California, 1952–1953. Am J Trop Med Hyg 1953;3:779–88.

TABLE I. Summary — cases of specified notifiable diseases, United States

Disease	6th Week Ending			Cumulative, 6th Week Ending		
	Feb. 10, 1990	Feb. 11, 1989	Median 1985-1989	Feb. 10, 1990	Feb. 11, 1989	Median 1985-1989
Acquired Immunodeficiency Syndrome (AIDS)	1,484	U*	316	5,418	3,174	1,846
Aseptic meningitis	95	108	76	498	473	473
Encephalitis: Primary (arthropod-borne & unspc)	18	16	16	68	66	87
Post-infectious	6	-	1	12	7	7
Gonorrhea: Civilian	12,715	13,423	14,010	74,785	75,808	94,371
Military	198	315	254	1,188	1,303	1,529
Hepatitis: Type A	590	702	500	2,694	3,466	2,575
Type B	363	416	454	1,829	2,062	2,461
Non A, Non B	28	48	48	196	261	324
Unspecified	30	66	89	177	245	386
Legionellosis	27	27	12	122	101	85
Leprosy	3	5	2	13	14	15
Malaria	27	33	14	106	115	72
Measles: Total†	129	107	51	756	402	158
Indigenous	57	101	50	554	376	146
Imported	72	6	3	202	26	24
Meningococcal infections	64	72	72	309	297	337
Mumps	81	101	90	541	579	482
Pertussis	102	54	47	276	250	220
Rubella (German measles)	1	4	4	35	20	24
Syphilis (Primary & Secondary): Civilian	758	836	625	4,683	4,319	3,810
Military	6	10	6	66	38	23
Toxic Shock syndrome	6	2	7	41	28	34
Tuberculosis	245	276	348	1,872	1,780	1,733
Tularemia	-	-	1	4	8	10
Typhoid Fever	5	12	7	32	45	28
Typhus fever, tick-borne (RMSF)	2	10	1	10	16	7
Rabies, animal	49	65	71	311	414	414

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1990		Cum. 1990
Anthrax	-	Leptospirosis	3
Botulism: Foodborne	-	Plague	-
Infant	3	Polioomyelitis, Paralytic,‡	-
Other (Ore. 1)	1	Psittacosis (Calif. 1)	22
Brucellosis (Mass. 1, Iowa 1, Fla. 1)	5	Rabies, human	-
Cholera	-	Tetanus (Mich. 1)	5
Congenital rubella syndrome	-	Trichinosis	4
Congenital syphilis, ages < 1 year	-		
Diphtheria	-		

*Because AIDS cases are not received weekly from all reporting areas, comparison of weekly figures may be misleading.

†Three of the 129 reported cases for this week were imported from a foreign country or can be directly traceable to a known internationally imported case within two generations.

‡No cases of suspected poliomyelitis have been reported in 1990; none of 13 suspected cases in 1989 have been confirmed to date. Nine of 14 suspected cases in 1988 were confirmed and all were vaccine-associated.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending February 10, 1990 and February 11, 1989 (6th Week)

Reporting Area	AIDS	Aseptic Mening- itis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionel- losis	Leprosy
			Primary	Post-in- fectious			A	B	NA,NB	Unspeci- fied		
			Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1989	Cum. 1990	Cum. 1990		
UNITED STATES	5,418	498	68	12	74,785	75,808	2,694	1,829	196	177	122	13
NEW ENGLAND	176	34	4	-	2,358	2,312	42	114	4	12	5	-
Maine	8	1	-	-	25	35	-	6	-	1	-	-
N.H.	21	1	-	-	26	22	1	8	-	1	-	-
Vt.	-	2	-	-	9	10	1	3	2	-	1	-
Mass.	78	12	1	-	856	950	29	85	2	10	2	-
R.I.	7	16	-	-	124	205	5	10	-	-	2	-
Conn.	62	2	3	-	1,318	1,090	6	2	-	-	-	-
MID. ATLANTIC	2,289	96	2	-	8,401	11,161	484	287	31	17	32	4
Upstate N.Y.	275	34	2	-	1,338	1,763	101	84	5	-	15	-
N.Y. City	1,526	8	-	-	3,926	3,800	34	74	5	10	2	3
N.J.	303	-	-	-	1,940	1,764	40	29	10	-	3	1
Pa.	185	54	-	-	1,197	3,834	309	100	11	7	12	-
E.N. CENTRAL	271	93	10	2	16,354	13,626	163	253	16	12	36	-
Ohio	89	36	2	1	5,764	3,513	26	59	6	2	14	-
Ind.	38	18	1	1	1,309	782	22	83	2	4	6	-
Ill.	73	4	2	-	4,817	4,144	28	7	1	1	-	-
Mich.	44	34	4	-	3,966	3,940	73	71	7	5	11	-
Wis.	27	1	1	-	498	1,247	14	33	-	-	5	-
W.N. CENTRAL	157	24	3	-	4,585	3,223	126	66	5	2	5	-
Minn.	15	-	1	-	484	332	11	4	1	-	-	-
Iowa	3	2	1	-	346	278	35	9	1	1	-	-
Mo.	106	11	-	-	2,560	2,002	67	45	-	-	5	-
N. Dak.	-	-	-	-	16	17	1	-	-	-	-	-
S. Dak.	1	1	-	-	31	28	4	1	2	-	-	-
Nebr.	16	7	1	-	207	257	8	5	1	-	-	-
Kans.	16	3	-	-	941	309	-	2	-	1	-	-
S. ATLANTIC	858	101	23	1	21,792	20,984	311	388	34	16	16	-
Del.	12	3	1	-	300	314	18	5	1	-	-	-
Md.	93	24	3	-	2,590	1,410	160	72	5	1	7	-
D.C.	47	1	-	-	365	1,390	3	3	2	-	-	-
Va.	173	24	9	-	1,819	2,016	15	29	4	12	2	-
W. Va.	13	1	1	-	157	181	4	15	-	-	-	-
N.C.	56	11	7	-	3,963	3,273	47	114	17	-	3	-
S.C.	53	1	-	-	2,145	2,267	8	83	3	2	2	-
Ga.	157	5	1	-	5,269	3,832	26	39	1	1	2	-
Fla.	254	31	1	1	5,184	6,301	30	28	1	-	-	-
E.S. CENTRAL	87	30	5	-	6,251	6,195	45	138	16	2	10	-
Ky.	20	8	-	-	627	560	13	39	6	2	1	-
Tenn.	28	4	2	-	1,764	2,079	10	67	6	-	5	-
Ala.	21	13	3	-	2,476	1,770	22	32	4	-	4	-
Miss.	18	5	-	-	1,384	1,786	-	-	-	-	-	-
W.S. CENTRAL	470	13	-	1	6,354	8,266	195	85	2	14	7	5
Ark.	7	1	-	-	749	835	47	7	-	-	-	-
La.	99	2	-	-	1,531	1,300	9	23	-	-	2	-
Okla.	27	3	-	1	657	825	66	19	2	1	5	-
Tex.	337	7	-	-	3,417	5,306	73	36	-	13	-	5
MOUNTAIN	149	22	3	-	1,384	1,508	382	145	16	22	7	-
Mont.	3	1	-	-	15	27	9	8	1	1	-	-
Idaho	5	-	-	-	12	27	6	11	4	-	-	-
Wyo.	-	1	1	-	18	15	13	2	-	-	-	-
Colo.	37	5	-	-	248	239	20	20	3	9	-	-
N. Mex.	3	3	-	-	130	128	34	14	-	-	-	-
Ariz.	66	6	2	-	620	555	245	43	7	6	3	-
Utah	15	1	-	-	58	68	14	5	-	2	-	-
Nev.	20	5	-	-	283	449	41	42	1	4	4	-
PACIFIC	961	85	18	8	7,306	8,533	946	353	72	80	4	4
Wash.	80	-	1	-	783	781	112	41	11	3	-	-
Oreg.	16	-	-	-	323	357	125	46	7	2	-	-
Calif.	833	78	16	7	6,015	7,208	654	252	53	74	4	1
Alaska	6	1	-	-	151	146	23	5	1	-	-	-
Hawaii	26	6	1	1	34	41	32	9	-	1	-	3
Guam	1	-	-	-	18	17	2	1	-	2	-	-
P.R.	212	16	4	-	-	109	5	5	-	-	-	-
V.I.	1	-	-	-	59	51	-	1	-	-	-	-
Amer. Samoa	-	-	-	-	-	8	-	-	-	-	-	-
C.N.M.I.	-	-	-	-	-	12	-	-	-	-	-	-

N: Not notifiable

U: Unavailable

C.N.M.I.: Commonwealth of the Northern Mariana Islands

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending February 10, 1990 and February 11, 1989 (6th Week)

Reporting Area	Malaria	Measles (Rubeola)					Menin- gococcal Infections	Mumps		Pertussis			Rubella		
		Indigenous		Imported*		Total									
		Cum. 1990	1990	Cum. 1990	1990	Cum. 1990	Cum. 1989	Cum. 1990	1990	Cum. 1990	1990	Cum. 1990	Cum. 1989	1990	Cum. 1990
UNITED STATES	106	57	554	72	202	402	309	81	541	102	276	250	1	35	20
NEW ENGLAND	16	-	5	5	6	4	23	1	4	13	54	12	-	1	-
Maine	-	-	-	-	-	-	4	-	-	-	1	4	-	-	-
N.H.	-	-	-	51	6	-	-	-	1	6	6	5	-	-	-
Vt.	3	-	-	-	-	1	2	1	1	-	1	1	-	-	-
Mass.	9	-	-	-	-	3	13	-	2	5	43	-	-	-	-
R.I.	1	-	-	-	-	-	-	-	-	-	-	2	-	1	-
Conn.	3	-	5	-	-	-	4	-	-	2	3	-	-	-	-
MID. ATLANTIC	17	6	25	51	60	26	48	9	38	47	61	24	-	-	-
Upstate N.Y.	3	-	2	51	52	-	16	4	13	46	52	6	-	-	1
N.Y. City	7	1	5	-	2	14	3	-	-	-	-	-	-	-	-
N.J.	2	-	-	-	-	11	9	-	7	-	2	17	-	-	-
Pa.	5	5	18	-	6	1	20	5	18	1	7	1	-	-	-
E.N. CENTRAL	7	50	294	12	111	46	42	12	52	19	59	24	-	5	1
Ohio	2	45	45	-	-	45	16	12	12	19	19	1	-	-	-
Ind.	-	-	3	-	-	-	5	-	4	-	26	-	-	-	-
Ill.	2	-	90	-	-	-	8	-	9	-	2	6	-	5	-
Mich.	2	5	33	12	111	-	9	-	20	-	8	3	-	-	-
Wis.	1	-	123	-	-	1	4	-	7	-	4	14	-	-	1
W.N. CENTRAL	1	-	19	-	-	173	14	3	18	-	2	6	-	-	1
Minn.	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Iowa	-	-	19	-	-	-	1	-	3	-	-	5	-	-	-
Mo.	1	-	-	-	-	173	6	1	1	-	1	1	-	-	1
N. Dak.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S. Dak.	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
Nebr.	-	-	-	-	-	-	1	1	1	-	1	-	-	-	-
Kans.	-	-	-	-	-	-	3	1	13	-	-	-	-	-	-
S. ATLANTIC	21	-	24	3	14	10	58	29	195	5	35	6	-	-	-
Del.	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Md.	5	-	7	21	11	4	8	24	117	2	15	1	-	-	-
D.C.	4	-	-	11	1	1	-	2	4	-	1	-	-	-	-
Va.	6	-	3	-	2	-	8	1	9	1	2	1	-	-	-
W. Va.	-	-	-	-	-	-	1	1	8	-	5	-	-	-	-
N.C.	2	-	-	-	-	5	8	-	19	-	5	1	-	-	-
S.C.	-	-	-	-	-	-	6	1	9	-	-	-	-	-	-
Ga.	-	-	1	-	-	-	14	-	11	1	4	-	-	-	-
Fla.	4	-	13	-	-	-	13	-	18	1	2	3	-	-	-
E.S. CENTRAL	3	-	15	-	-	1	19	2	22	1	11	11	-	-	-
Ky.	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-
Tenn.	2	-	10	-	-	-	8	2	6	1	2	8	-	-	-
Ala.	1	-	-	-	-	1	6	-	3	-	9	2	-	-	-
Miss.	-	-	5	-	-	-	-	N	N	-	-	1	-	-	-
W.S. CENTRAL	-	-	18	-	2	1	17	19	135	-	6	3	-	-	-
Ark.	-	-	-	-	-	-	1	1	22	-	-	1	-	-	-
La.	-	-	-	-	-	1	3	8	30	-	1	-	-	-	-
Okla.	-	-	3	-	-	-	5	-	61	-	5	2	-	-	-
Tex.	-	-	15	-	2	-	8	10	22	-	-	-	-	-	-
MOUNTAIN	2	1	7	1	1	15	5	4	31	13	23	126	-	-	1
Mont.	-	-	-	-	-	13	3	-	-	-	-	-	-	-	-
Idaho	1	-	-	-	-	1	-	2	16	-	2	6	-	-	-
Wyo.	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
Colo.	-	1	1	1	1	-	1	1	3	12	13	10	-	-	-
N. Mex.	-	-	-	-	-	-	-	N	N	-	6	1	-	-	-
Ariz.	1	-	6	-	-	1	-	1	7	1	2	107	-	-	-
Utah	-	-	-	-	-	-	-	-	2	-	-	1	-	-	-
Nev.	-	-	-	-	-	-	1	-	1	-	-	1	-	-	1
PACIFIC	39	-	147	-	8	126	83	2	46	4	25	38	1	29	16
Wash.	2	-	-	-	6	-	7	2	5	1	3	2	-	-	-
Oreg.	2	-	-	-	-	-	9	N	N	-	2	-	-	-	-
Calif.	34	-	147	-	2	122	65	-	40	2	17	35	-	25	16
Alaska	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-
Hawaii	1	-	-	-	-	4	-	-	1	1	3	1	1	4	-
Guam	1	U	-	U	-	-	-	U	-	U	-	1	U	-	-
P.R.	-	-	-	-	-	42	1	-	2	-	-	-	-	-	-
V.I.	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Amer. Samoa	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-
C.N.M.I.	-	U	-	U	-	-	-	U	-	U	-	-	U	-	-

*For measles only, imported cases includes both out-of-state and international importations.

N: Not notifiable U: Unavailable ¹International ¹Out-of-state

TABLE III. (Cont'd.) Cases of specified notifiable diseases, United States, weeks ending February, 10 1990 and February 11, 1989 (6th Week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic- shock Syndrome	Tuberculosis		Tula- remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1990	Cum. 1989	Cum. 1990	Cum. 1990	Cum. 1989	Cum. 1990	Cum. 1990	Cum. 1990	Cum. 1990
UNITED STATES	4,683	4,319	41	1,872	1,780	4	32	10	311
NEW ENGLAND	204	203	3	26	45	-	-	-	-
Maine	1	-	-	1	1	-	-	-	-
N.H.	23	-	-	1	4	-	-	-	-
Vt.	-	-	-	1	1	-	-	-	-
Mass.	64	73	2	8	13	-	-	-	-
R.I.	-	5	-	7	9	-	-	-	-
Conn.	116	125	1	9	17	-	-	-	-
MID. ATLANTIC	924	906	7	480	429	1	8	1	88
Upstate N.Y.	47	67	3	17	36	-	5	-	3
N.Y. City	663	308	1	360	304	-	-	-	-
N.J.	176	197	-	41	42	1	3	1	34
Pa.	38	334	3	62	47	-	-	-	51
E.N. CENTRAL	313	163	10	210	210	-	4	1	5
Ohio	51	7	3	23	53	-	1	-	-
Ind.	4	5	1	12	6	-	-	-	-
Ill.	146	78	-	112	82	-	2	-	2
Mich.	81	66	6	52	60	-	1	1	-
Wis.	31	7	-	11	9	-	-	-	3
W.N. CENTRAL	38	38	3	56	56	1	-	1	40
Minn.	12	2	-	13	10	-	-	-	25
Iowa	4	9	-	4	8	-	-	-	-
Mo.	19	18	2	20	15	1	-	1	-
N. Dak.	1	-	-	3	4	-	-	-	3
S. Dak.	-	-	-	4	6	-	-	-	8
Nebr.	2	9	1	7	2	-	-	-	-
Kans.	-	-	-	5	11	-	-	-	4
S. ATLANTIC	1,766	1,532	-	284	323	1	2	2	89
Del.	21	12	-	4	1	-	-	-	2
Md.	147	90	-	32	27	-	2	-	35
D.C.	32	112	-	2	22	-	-	-	-
Va.	62	75	-	18	37	-	-	-	19
W. Va.	2	3	-	5	10	-	-	-	1
N.C.	191	83	-	32	29	1	-	2	1
S.C.	115	88	-	49	48	-	-	-	14
Ga.	457	335	-	39	38	-	-	-	17
Fla.	739	734	-	103	111	-	-	-	-
E.S. CENTRAL	409	265	4	108	137	-	-	1	10
Ky.	9	5	-	38	44	-	-	-	4
Tenn.	135	85	2	28	16	-	-	1	-
Ala.	148	107	2	34	53	-	-	-	6
Miss.	117	68	-	8	24	-	-	-	-
W.S. CENTRAL	563	564	1	201	129	-	1	3	37
Ark.	20	49	-	32	15	-	-	-	3
La.	229	103	-	13	7	-	-	-	-
Okla.	28	6	1	12	1	-	-	3	11
Tex.	286	406	-	144	106	-	1	-	23
MOUNTAIN	88	81	4	36	49	1	2	-	10
Mont.	-	-	-	-	-	-	-	-	4
Idaho	1	-	1	-	1	-	-	-	-
Wyo.	-	-	1	-	-	-	-	-	4
Colo.	4	4	-	-	-	-	-	-	-
N. Mex.	7	1	1	14	8	1	-	-	1
Ariz.	47	26	1	11	34	-	2	-	-
Utah	1	4	-	-	-	-	-	-	-
Nev.	28	46	-	11	6	-	-	-	1
PACIFIC	378	567	9	471	402	-	15	1	32
Wash.	4	36	-	30	13	-	-	-	-
Oreg.	9	30	-	14	11	-	-	-	-
Calif.	359	497	8	402	357	-	14	1	23
Alaska	2	-	-	3	4	-	-	-	9
Hawaii	4	4	1	22	17	-	1	-	-
Guam	-	2	-	6	9	-	-	-	-
P.R.	-	40	-	1	6	-	-	-	12
V.I.	-	1	-	1	1	-	-	-	-
Amer. Samoa	-	-	-	-	-	-	-	-	-
C.N.M.I.	-	1	-	-	-	-	-	-	-

U: Unavailable

**TABLE IV. Deaths in 121 U.S. cities,* week ending
February 10, 1990 (6th Week)**

Reporting Area	All Causes, By Age (Years)						P&I** Total	Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1			All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	728	531	119	40	16	22	80	S. ATLANTIC	1,428	865	274	159	49	68	89
Boston, Mass.	206	144	36	11	3	12	29	Atlanta, Ga.	213	128	45	25	10	5	8
Bridgeport, Conn.	55	37	12	4	2	-	7	Baltimore, Md.	125	85	24	10	2	4	10
Cambridge, Mass.	27	25	2	-	-	-	2	Charlotte, N.C.	112	66	20	16	5	5	12
Fall River, Mass.	33	27	4	2	-	-	4	Jacksonville, Fla.	141	101	23	11	4	2	14
Hartford, Conn.	68	47	8	6	4	3	5	Miami, Fla.	208	110	43	37	11	7	1
Lowell, Mass.	27	21	6	-	-	-	2	Norfolk, Va.	64	45	13	3	1	2	10
Lynn, Mass.	17	15	1	1	-	-	-	Richmond, Va.	100	72	11	8	4	5	12
New Bedford, Mass.	28	23	4	-	1	-	1	Savannah, Ga.	69	32	19	13	4	1	7
New Haven, Conn.	68	47	13	3	2	3	6	St. Petersburg, Fla.	79	62	9	5	-	3	4
Providence, R.I.	44	31	10	2	-	1	-	Tampa, Fla.	105	67	18	9	3	5	7
Somerville, Mass.	7	5	1	1	-	-	-	Washington, D.C.	184	78	43	21	4	28	4
Springfield, Mass.	48	38	4	1	3	2	7	Wilmington, Del.	28	19	6	1	1	1	-
Waterbury, Conn.	33	24	8	1	-	-	7	E.S. CENTRAL	879	608	152	59	33	27	90
Worcester, Mass.	67	47	10	8	1	1	10	Birmingham, Ala.	146	101	27	10	5	3	10
MID. ATLANTIC	2,886	1,956	528	285	45	71	214	Chattanooga, Tenn.	82	55	16	1	6	4	12
Albany, N.Y.	55	38	11	3	-	3	3	Knoxville, Tenn.	96	64	19	7	3	3	18
Allentown, Pa.	13	10	2	-	1	-	-	Louisville, Ky.	80	58	12	3	3	4	10
Buffalo, N.Y.	129	84	30	5	4	6	8	Memphis, Tenn.	196	141	30	15	7	3	19
Camden, N.J.	18	9	4	4	-	1	-	Mobile, Ala.	84	55	13	8	4	4	3
Elizabeth, N.J.	14	8	5	1	-	-	2	Montgomery, Ala.‡	58	48	7	2	1	-	3
Erie, Pa.†	42	30	8	2	-	2	-	Nashville, Tenn.	137	86	28	13	4	6	15
Jersey City, N.J.	55	34	7	11	3	-	4	W.S. CENTRAL	1,959	1,244	415	195	60	44	152
N.Y. City, N.Y.	1,587	1,043	307	181	24	32	101	Austin, Tex.	79	57	11	9	1	1	13
Newark, N.J.	89	40	13	24	6	5	7	Baton Rouge, La.	60	42	10	6	2	-	5
Paterson, N.J.	36	25	9	1	-	1	5	Corpus Christi, Tex.	66	48	12	4	1	1	11
Philadelphia, Pa.	312	240	34	24	3	11	23	Dallas, Tex.	217	125	50	31	5	6	17
Pittsburgh, Pa.†	93	67	21	4	-	1	5	El Paso, Tex.	89	50	18	9	7	4	12
Reading, Pa.	24	18	4	2	-	-	7	Fort Worth, Tex.	120	75	32	9	1	3	8
Rochester, N.Y.	130	96	24	6	-	4	20	Houston, Tex.‡	734	436	169	89	24	16	18
Schenectady, N.Y.	34	24	5	3	1	1	2	Little Rock, Ark.	80	50	24	4	1	1	12
Scranton, Pa.†	48	35	11	2	-	-	6	New Orleans, La.	119	76	25	11	7	-	-
Syracuse, N.Y.	99	73	18	2	3	3	7	San Antonio, Tex.	210	150	36	12	7	5	39
Trenton, N.J.	42	30	9	3	-	-	4	Shreveport, La.	67	43	13	5	3	3	9
Utica, N.Y.	31	29	1	1	-	-	1	Tulsa, Okla.	118	92	15	6	1	4	8
Yonkers, N.Y.	35	23	5	6	-	1	9	MOUNTAIN	860	570	159	76	18	36	71
E.N. CENTRAL	2,533	1,688	511	201	60	73	161	Albuquerque, N. Mex.	96	65	19	8	2	1	5
Akron, Ohio	90	61	19	7	1	2	4	Colo. Springs, Colo.	43	29	9	1	2	2	7
Canton, Ohio	48	37	9	2	-	-	6	Denver, Colo.	162	100	27	19	2	14	8
Chicago, Ill.‡	564	362	125	45	10	22	16	Las Vegas, Nev.	142	91	29	16	2	4	9
Cincinnati, Ohio	138	103	24	6	5	-	14	Ogden, Utah	21	17	2	1	-	1	1
Cleveland, Ohio	187	111	43	23	7	3	6	Phoenix, Ariz.	179	118	32	16	4	9	21
Columbus, Ohio	199	127	39	20	6	7	15	Pueblo, Colo.	30	29	-	1	-	-	4
Dayton, Ohio	129	90	22	10	4	3	17	Salt Lake City, Utah	36	21	7	3	3	2	1
Detroit, Mich.	249	145	48	33	13	10	12	Tucson, Ariz.	151	100	34	11	3	3	15
Evansville, Ind.	54	37	14	1	1	1	6	PACIFIC	2,199	1,469	370	228	65	54	156
Fort Wayne, Ind.	70	48	12	5	1	4	5	Berkeley, Calif.	14	8	3	3	-	-	-
Gary, Ind.‡	16	9	4	3	-	-	-	Fresno, Calif.	86	56	21	3	1	5	7
Grand Rapids, Mich.	67	48	10	7	2	-	7	Glendale, Calif.	36	32	2	-	2	-	1
Indianapolis, Ind.	188	125	44	12	3	4	5	Honolulu, Hawaii	46	33	10	3	-	-	3
Madison, Wis.	35	26	4	2	-	3	3	Long Beach, Calif.	114	79	17	14	2	2	16
Milwaukee, Wis.	140	99	28	11	1	1	4	Los Angeles, Calif.	623	414	99	72	21	8	32
Peoria, Ill.	62	46	10	4	-	2	8	Oakland, Calif.	65	41	17	2	2	3	4
Rockford, Ill.	56	36	13	2	1	4	7	Pasadena, Calif.	54	38	8	2	1	5	1
South Bend, Ind.	65	47	13	3	-	2	6	Portland, Oreg.	157	109	25	12	4	6	13
Toledo, Ohio	99	70	18	3	5	3	13	Sacramento, Calif.	161	100	40	16	4	1	17
Youngstown, Ohio‡	77	61	12	2	-	2	7	San Diego, Calif.	175	124	21	15	8	7	22
W.N. CENTRAL	952	698	160	54	22	18	95	San Francisco, Calif.	199	106	33	45	7	5	7
Des Moines, Iowa	68	52	9	5	2	-	6	San Jose, Calif.	193	129	34	18	5	7	13
Duluth, Minn.	30	23	7	-	-	-	5	Seattle, Wash.	163	116	20	20	5	2	3
Kansas City, Kans.	34	19	8	4	1	2	2	Spokane, Wash.	65	52	8	1	1	3	13
Kansas City, Mo.	140	96	30	7	5	2	12	Tacoma, Wash.	48	32	12	2	2	-	4
Lincoln, Nebr.	52	38	7	6	1	-	5	TOTAL	14,424	9,629	2,688	1,297	368	413	1,108
Minneapolis, Minn.	251	187	40	15	5	4	30								
Omaha, Nebr.	81	57	20	3	1	-	8								
St. Louis, Mo.	162	123	21	7	4	7	15								
St. Paul, Minn.	67	46	13	5	3	-	5								
Wichita, Kans.	67	57	5	2	-	3	7								

*Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

**Pneumonia and influenza.

†Because of changes in reporting methods in these 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

††Total includes unknown ages.

‡Data not available. Figures are estimates based on average of past available 4 weeks.

Progress in Chronic Disease Prevention

Prevalence of Arthritic Conditions – United States, 1987

Arthritis is a widely prevalent, disabling disease that places substantial demands on health-care resources. National estimates of the prevalence of arthritic diseases and of associated disability have been based on data from the 1960–1962 National Health Examination Survey, the 1971–1975 National Health and Nutrition Examination Survey (NHANES I), and the 1983–1985 National Health Interview Surveys (NHIS) (1,2). This report uses 1987 NHIS data to update national estimates of arthritis prevalence and resulting physical activity limitation and provides estimates of the prevalence of arthritic conditions for each state. Estimates are based on a probability sample of the civilian noninstitutionalized (CNI) population of the United States (3).

Survey respondents were asked whether they had had various arthritic conditions in the past year and, if so, whether they had seen a physician for them. The national and state estimates reported here are based on the 3036 persons reporting one or more of four conditions: arthritis, bursitis, gout, and unspecified rheumatism (Table 1). Information about limitation in activity attributable to arthritic conditions is based on responses to questions regarding whether a person is limited in or prevented from working, housekeeping, or performing other activities as a result of a health condition, followed by questions about conditions causing the limitation.

Because NHIS is a probability sample of the CNI population, the proportions of persons with arthritic conditions in each of 36 age-sex-race strata in the sample were adjusted to generate national estimates. For each state, 1987 population estimates for the same 36 strata were obtained (4) and adjusted to approximate the CNI population using unpublished estimates from the Bureau of the Census.*

In 1987, approximately 14.6% of the U.S. population (34.7 million persons) reported having an arthritic condition, and approximately 12.1% consulted a physician for it (Table 2). Self-reported arthritic conditions were over twice as prevalent in the state with the highest proportion (Florida) as in that with the lowest (Alaska) (Table 3). Arthritis was responsible for limiting the activity of 2.6% of the CNI population; for persons ≥75 years of age, the proportion was 12.6% (Table 2).

*The 36 proportions from NHIS were multiplied by each state's 36 CNI population estimates and the products summed to obtain the estimated number of persons with arthritic conditions for the state. Division of this figure by the state's CNI population gave a prevalence proportion.

TABLE 1. Distribution of self-reported arthritic conditions – National Health Interview Survey, 1987

Condition	No. respondents in survey	National prevalence
Arthritis	2668	12.7%
Bursitis	389	1.9%
Gout	197	1.0%
Rheumatism, unspecified	49	0.2%
≥1 Arthritic condition	3036	14.6%

Arthritic Conditions — Continued

Reported by: Office of Surveillance and Analysis and Div of Chronic Disease Control and Community Intervention, Center for Chronic Disease Prevention and Health Promotion, CDC.

Editorial Note: The validity of using self-reports of arthritic conditions as a measure of "actual" prevalence is unknown. However, the national age-specific prevalence proportions for physician-consulted arthritic conditions (Table 2) are similar to estimates for clinically confirmed osteoarthritis, rheumatoid arthritis, other arthritis and rheumatism, and bursitis reported from NHANES I (5).

Excluding nursing home residents (in 1985, 1.5 million persons [6]) from NHIS did not result in a substantial underestimate of the prevalence of arthritic conditions. Based on prevalence estimates for nursing home residents (7), the inclusion of this population in the analysis probably would have increased by <2% the 28.6 million persons with self-reported, physician-consulted arthritic conditions.

Because of the method used to produce the state-specific estimates, differences in prevalence among the states primarily reflect variations in demographic composition. For example, Florida's high prevalence proportion for arthritic conditions is due primarily to its relatively large population of elderly persons, and the low prevalence in Alaska can be attributed partly to its high proportions of persons of "other" race (e.g., Asian/Pacific Islander and Native American), among whom the prevalence of arthritic conditions is low (Table 2). However, these estimates do not account for other factors that influence the prevalence of some arthritic conditions, such as obesity and occupation (8).

Approximately 2.5% of the U.S. population (6 million persons) believe they have an arthritic condition but have not consulted a physician for it (Table 2). These findings indicate the need for health-care providers and public and private health agencies to determine why these persons have not sought medical care and to identify approaches for overcoming barriers to care.

TABLE 2. National prevalence of arthritic conditions, by sex, race, and age — National Health Interview Survey, 1987

Characteristic	No. in thousands (%)					
	Self-reported		Physician-consulted		Activity limitation	
Sex						
Female	21,922	(17.8)	18,413	(15.0)	4,288	(3.5)
Male	12,785	(11.1)	10,236	(8.9)	1,877	(1.6)
Race						
White	30,257	(15.0)	24,932	(12.4)	5,219	(2.6)
Black	3,969	(13.7)	3,306	(11.4)	856	(3.0)
Other	481	(5.6)	411	(4.8)	90	(1.2)
Age (yrs)						
<35	3,288	(2.5)	2,627	(2.0)	268	(0.2)
35-44	3,709	(11.0)	3,045	(9.0)	420	(1.2)
45-54	5,389	(23.3)	4,362	(18.9)	720	(3.1)
55-64	8,201	(37.6)	6,820	(31.2)	1,603	(7.3)
65-74	8,411	(48.6)	6,884	(39.8)	1,783	(10.3)
≥75	5,709	(52.7)	4,911	(45.3)	1,371	(12.6)
Total	34,707	(14.6)	28,649	(12.1)	6,165	(2.6)

*Arthritic Conditions — Continued***TABLE 3. Estimated prevalence of arthritic conditions, by area — United States, 1987**

Area	No. in thousands (%)					
	Self-reported		Physician-consulted		Activity limitation	
Alabama	602	(15.0)	499	(12.4)	112	(2.8)
Alaska	44	(8.8)	36	(7.2)	6	(1.3)
Arizona	479	(14.3)	395	(11.8)	83	(2.5)
Arkansas	370	(15.8)	306	(13.0)	68	(2.9)
California	3602	(13.3)	2976	(11.0)	623	(2.3)
Colorado	401	(12.5)	331	(10.3)	67	(2.1)
Connecticut	490	(15.6)	404	(12.8)	86	(2.7)
Delaware	93	(14.6)	77	(12.0)	16	(2.6)
District of Columbia	102	(16.8)	85	(14.1)	22	(3.6)
Florida	2141	(18.1)	1768	(15.0)	397	(3.4)
Georgia	835	(13.7)	690	(11.3)	151	(2.5)
Hawaii	110	(10.8)	94	(9.3)	20	(2.0)
Idaho	129	(13.1)	106	(10.8)	22	(2.2)
Illinois	1663	(14.6)	1373	(12.0)	296	(2.6)
Indiana	786	(14.4)	649	(11.9)	137	(2.5)
Iowa	421	(15.2)	347	(12.5)	74	(2.7)
Kansas	356	(14.8)	294	(12.2)	63	(2.6)
Kentucky	528	(14.5)	436	(12.0)	93	(2.5)
Louisiana	592	(13.6)	490	(11.2)	109	(2.5)
Maine	173	(14.9)	143	(12.3)	30	(2.6)
Maryland	640	(14.4)	528	(11.9)	114	(2.6)
Massachusetts	876	(15.2)	724	(12.6)	154	(2.7)
Michigan	1289	(14.2)	1063	(11.7)	227	(2.5)
Minnesota	584	(14.0)	482	(11.5)	100	(2.4)
Mississippi	376	(14.6)	312	(12.1)	72	(2.8)
Missouri	775	(15.4)	640	(12.7)	139	(2.8)
Montana	110	(13.9)	91	(11.4)	19	(2.4)
Nebraska	229	(14.7)	189	(12.2)	40	(2.6)
Nevada	135	(13.6)	111	(11.2)	23	(2.3)
New Hampshire	145	(13.9)	119	(11.5)	25	(2.4)
New Jersey	1191	(15.7)	982	(13.0)	213	(2.8)
New Mexico	188	(12.8)	155	(10.5)	32	(2.2)
New York	2716	(15.5)	2245	(12.8)	490	(2.8)
North Carolina	931	(14.9)	770	(12.4)	170	(2.7)
North Dakota	90	(13.9)	74	(11.5)	16	(2.4)
Ohio	1589	(14.9)	1311	(12.3)	282	(2.6)
Oklahoma	455	(14.3)	377	(11.8)	80	(2.5)
Oregon	387	(14.4)	319	(11.9)	67	(2.5)
Pennsylvania	1918	(16.3)	1584	(13.5)	347	(2.9)
Rhode Island	152	(15.7)	125	(13.0)	27	(2.8)
South Carolina	473	(14.2)	391	(11.8)	87	(2.6)
South Dakota	100	(14.5)	83	(12.0)	17	(2.5)
Tennessee	716	(15.0)	592	(12.4)	129	(2.7)
Texas	2109	(12.8)	1739	(10.6)	363	(2.2)
Utah	178	(10.7)	146	(8.8)	29	(1.7)
Vermont	74	(13.7)	61	(11.3)	13	(2.3)
Virginia	816	(14.4)	675	(11.9)	146	(2.6)
Washington	604	(13.6)	498	(11.2)	103	(2.3)
West Virginia	290	(15.4)	239	(12.7)	51	(2.7)
Wisconsin	683	(14.4)	563	(11.9)	119	(2.5)
Wyoming	54	(11.3)	45	(9.3)	9	(1.8)

Arthritic Conditions — Continued

Given the high prevalence of arthritic conditions among older persons and trends that favor population survival to older ages, the number of persons with these conditions and associated disabilities can be expected to continue increasing. Efforts aimed at limiting disease progression and preventing disability associated with arthritic conditions should include developing education programs for patients and primary-care providers and developing specific indications for referral of patients to specialists.

References

1. Lawrence RC, Hochberg MC, Kelsey JL, et al. Estimates of the prevalence of selected arthritic and musculoskeletal diseases in the United States. *J Rheumatol* 1989;16:427-41.
2. LaPlante MP. Data on disability from the National Health Interview Survey, 1983-85. Washington DC: National Institute on Disability and Rehabilitation Research, 1988.
3. NCHS. National Health Interview Survey [machine-readable public-use data tape]. Hyattsville, Maryland: US Department of Health and Human Services, Public Health Service, CDC, 1987.
4. Irwin R. 1980-1988 Intercensal population estimates by race, sex, and age [machine-readable data file]. Alexandria, Virginia: Demo-Detail, 1988.
5. Cunningham LS, Kelsey JL. Epidemiology of musculoskeletal impairments and associated disability. *Am J Public Health* 1984;74:574-9.
6. NCHS. The National Nursing Home Survey: 1985 summary for the United States. Hyattsville, Maryland: US Department of Health and Human Services, Public Health Service, CDC, 1989; DHHS publication no. (PHS)89-1758. (Vital and health statistics; series 13, no. 97).
7. NCHS. Profile of chronic illness in nursing homes: United States—National Nursing Home Survey, August 1973–April 1974. Hyattsville, Maryland: US Department of Health and Human Services, Public Health Service, CDC, 1977; DHEW publication no. (PHS)78-1780. (Vital and health statistics; series 13, no. 29).
8. Anderson JA, Felson DT. Factors associated with osteoarthritis of the knee in the first National Health and Nutrition Examination Survey. *Am J Epidemiol* 1988;128:179-89.

*Notice to Readers***Third International Conference on Nosocomial Infections**

CDC and the National Foundation for Infectious Diseases will cosponsor the Third International Conference on Nosocomial Infections on July 31–August 3, 1990, in Atlanta. Abstracts are due March 30. The abstract, registration, and housing forms and preliminary program are available from ASM Meetings, 1325 Massachusetts Avenue, N.W., Washington, DC 20005; telephone: (202) 737-3600.

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